COMMENTS ON FURTHER SPECIMENS OF *FAVORINUS TSURUGANUS* B. & A. FROM ECHIZEN-CHO NEAR TSURUGA BAY, JAPAN (NUDIBRANCHIA: EOLIDOIDEA: FAVORINIDAE)

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With Text-figure 1

The following five species of the genus *Favorinus* have previously been listed from Japan:

1. *Favorinus pacificus* Baba, 1937
   Loc.: Tomioka, Amakusa.
2. *F. japonicus* Baba, 1949
   Loc.: Sagami Bay; Seto, Kii; Tsuruga Bay.
3. *F. perfoliatus* Baba, 1949
   Loc.: Sagami Bay.
4. *F. mirabilis* Baba, 1955
   Loc.: Sagami Bay.
   Dist.: Madagascar.
5. *F. tsuruganus* Baba & Abe, 1964
   Loc.: Tsuruga Bay.

The present paper concerns the two specimens collected from the location adjacent to the type locality of *Favorinus tsuruganus*, which apparently agree with this species in the details of colouration, but differ in having a series of three cup-shaped swellings on the mid-length of each rhinophore instead of two bulbs. As the formation of two bulbs on each rhinophore has been regarded as one of the prominent specific characters for *tsuruganus*, the newly found specimens seemed to establish a distinct new species. However, it can be said that these specimens and the type of *tsuruganus* are exactly the same in every morphology and colouration except the only difference in the feature of rhinophores. This has suggested a considerable variability in the rhinophorial morphology and led us to the conclusion that the new specimens belong to *tsuruganus*. As the admission of such variation in the rhinophorial mor-

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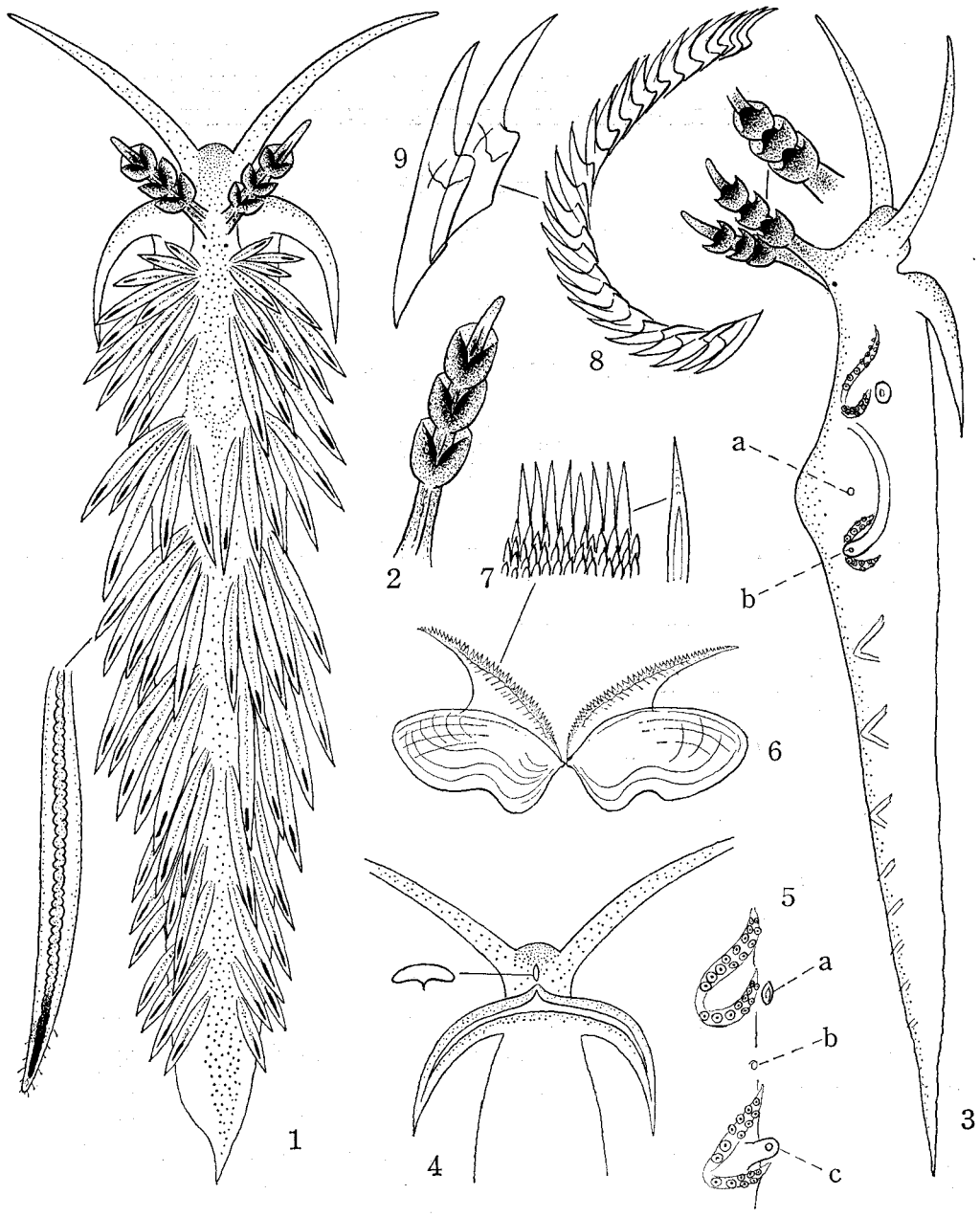

Fig. 1. *Favorinus tsuruganus* from Echizen-cho near Tsuruga Bay, August 10, 1966.
1. Entire animal in life, dorsal view, length (Code Ac) 20 mm. 2. Right rhinophore from rear. 3. Naked animal from right side. a. nephroproct, b. anus. 4. Head and foot from below. 5. First and second arches on right side, enlarged. a. genital orifices, b. nephroproct, c. anus. 6. Paired jaw-plates from outside (×15). 7. Rows of spiny denticles on the jaw-edge (×130). 8. Entire radular row from left side (×35). 9. Two radular teeth from left side (×100).

phology in a species is rather remarkable, it is seemingly requested to show the exact features of the new specimens as the foundation of our conclusion, hence the following description.

Favorinus tsuruganus Baba & Abe, 1964

Favorinus tsuruganus Baba & Abe, 1964, pp. 163–164, text-fig. 1.—Tsuruga Bay.

Material: A single specimen collected by Mr. M. Yokocho, a member of the Biological Club of Takaoka Senior High School, Toyama-ken, from Umeura of Echizen-cho, not far from Tsuruga Bay, Japan, on August 10, 1966; subtidal.

Another specimen was collected by Mr. R. Furudera of the Club from the same place on August 13, 1966. A coloured figure of this specimen made by Mr. H. Izumi was presented to help our study.

Description: The general body-form is approximately as in the type of *Favorinus tsuruganus*. The body-length from head to tail tip (Code Ac of Risso-Dominguez, 1963) is 20 mm.

In this material the rhinophores are not furnished with bulbs as stated in the type of the species,[1] but each with a series of three cup-shaped swellings on their half way. Seemingly these cups are constructed by union of the right and left lamellae stretched along the lateral sides of each rhinophorial club. The branchial papillae are long fusiform and smooth, though the liver diverticula within are minutely corrugated on their length. The cnidosacs are extremely small. As a rule these papillae are set anteriorly in a single row in horseshoe-shaped arches, numbering about 30 in the first, 15 in the second, 13 in the third, and 10 in the fourth and fifth respectively. The genital orifices open immediately below the hind leg of the first right arch. The present specimens profoundly agree with the type of the species in the colours of the body. The head is yellowish, and the rhinophores are deep black. The liver-diverticula within the papillae are tinted orange-yellow proximally and deep black towards the end. The latter pigmentation seen through the surface may be recognized as a black marking on the papillae near the tip. The general integument of the body proper is translucent and yellowish white. The oral tentacles, the tip of rhinophorial clubs, the median part of the back and tail, and the sides of the body are apt to be densely covered with opaque white. A group of opaque white dots is present on each branchial papilla down the tip on the outside. The anterior margin of the foot is yellowish. The sole is colourless.

The jaw-edge and the radular teeth show the usual characters of the type of the species. The radula formula is $27 \times 0.1.0$. The median cusp of the teeth is almost smooth.

Summary

The specimens of an eolid were collected from Echizen-cho near Tsuruga Bay

1) In the type of *Favorinus tsuruganus* there were two serial bulbs on each rhinophore.

on the Japan Sea coast of Middle Japan. They are here referred to *Favorinus tsuruganus* Baba & Abe, 1964, though they differ from the type of the species in having three cup-shaped (not bulbous) swellings on the mid-length of rhinophores.

REFERENCES

See also Baba & Hamatani, 1964.

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